

WHAT IS CLAIMED IS:

1. A specimen surface level adjusting method used
in a pattern inspecting apparatus for inspecting a
pattern on a specimen surface on the basis of a
5 detected image obtained by projecting inspecting light
onto the specimen surface, the specimen surface level
adjusting method comprising:

projecting level measuring light onto the specimen
surface;

10 detecting the position of the measuring light
reflected on the specimen surface;

calculating the level of the specimen surface on
the basis of the position of the optical axis;

adjusting the level of the specimen surface so
15 that the calculated level may be held within the depth
of focus of a pattern inspecting optical system;

detecting the intensity of the reflected light;
and

fixing the specimen surface to a reference level,
20 if the intensity is less than a specific threshold
value.

2. The specimen surface level adjusting method
according to claim 1, wherein the measuring light is
projected diagonally onto the specimen surface.

25 3. The specimen surface level adjusting method
according to claim 1, wherein the reference level is
the level immediately before the specimen surface is

fixed.

4. The specimen surface level adjusting method according to claim 1, wherein the reference level is the average value of the level in a specific period of time before the specimen surface is fixed.

5. The specimen surface level adjusting method according to claim 1, wherein

the reflected light is caused to enter an optical sensor including a plurality of photoelectric conversion elements, and

at least one of the position of the optical axis and the intensity is detected by monitoring the photoelectric conversion output of each of said plurality of photoelectric conversion elements.

6. The specimen surface level adjusting method according to claim 1, wherein

a specimen having the specimen surface is placed on a piezoelectric element, and

the level of the specimen surface is adjusted by a voltage applied to the piezoelectric element.

7. A specimen surface level adjusting method used in a pattern inspecting apparatus for inspecting a pattern on a specimen surface on the basis of a detected image obtained by projecting inspecting light onto the specimen surface, the specimen surface level adjusting method comprising:

projecting first measuring light for level

measurement onto the whole of the specimen surface;

detecting the intensity of the reflected light of
the first measuring light;

5 recording position information about projected
position where the intensity is less than a specific
threshold value;

projecting second measuring light for level
measurement onto the specimen surface;

10 detecting the position of the optical axis of the
reflected light of the second measuring light;

calculating the level of the specimen surface on
the basis of the position of the optical axis;

15 adjusting the level of the specimen surface so
that the calculated level may be held within the depth
of focus of a pattern inspecting optical system; and

fixing the level of the specimen surface to a
reference level at the projected position corresponding
to the recorded position information.

20 8. The specimen surface level adjusting method
according to claim 7, wherein the first and second
measuring lights are projected from a single light
source diagonally onto the specimen surface.

9. The specimen surface level adjusting method
according to claim 7, wherein the reference level is
25 the level immediately before the specimen surface is
fixed.

10. The specimen surface level adjusting method

according to claim 7, wherein the reference level is the average value of the level in a specific period of time before the specimen surface is fixed.

5 11. The specimen surface level adjusting method according to claim 7, wherein

the reflected lights of the first and second measuring lights are caused to enter an optical sensor including a plurality of photoelectric conversion elements, and

10 at least one of the position of the optical axis and the intensity is detected by monitoring the photoelectric conversion output of each of said plurality of photoelectric conversion elements.

15 12. The specimen surface level adjusting method according to claim 7, wherein

a specimen having the specimen surface is placed on a piezoelectric element, and

the level of the specimen surface is adjusted by a voltage applied to the piezoelectric element.